

REMARKS/ARGUMENT

Applicant responds herein to the Office Action dated May 5, 2004.

In the instant RCE application, claims 1-3 and 5-13 are being rejected once again on grounds of obviousness, this time over Yabe, et al (4,845,555) standing alone. Reconsideration is requested in view of the following comments.

In a prior communication dated September 11, 2003, the applicant has made it very clear that, as described in the introductory pages of the instant specification, the need for, and the advantages derived from correcting endoscope signals for signal line delays are known. The focus and thrust of the present invention is on achieving a modular, more widely applicable solution that fits a large diversity of endoscope devices. Endoscopes have their insertion portions that are typically utilized to insert into a human body cavity or, indeed, even into inanimate objects where parts need to be viewed which are not in the direct line of sight of a human eye.

There are a large diversity and variety of endoscope insertion parts that are optimized to handle different applications. These different parts have different constructions and generate different cable delays.

As a result of the foregoing, the prior art has taught to provide a unique delay circuitry and signal processing functionality for each different type of endoscope insertion part/imaging circuit. This increases cost, complexity, and the need to stock a large number of parts. In use, the personnel that utilizes these type of devices need to be provided with a greater variety of hardware and must be taught to use them. This is disadvantageous.

The present invention has evolved and presents for patenting, a delay circuit scheme in which the delay circuitry is made part of the signal processing microprocessor and is furthermore, programmable in a way that it can be used with a variety of endoscopes (i.e., imaging/insertable parts), without requiring special arrangements or hardware for different endoscopes that might be connected to the basic operational and signal processing circuits.

Claim 1 has been further amended to more forcefully drive home the point of distinction of the present invention over the prior art.

The Office Action directs the applicant to Figure 10 of the cited Yabe reference. In Figure 10, there is provided a video processing component 2 and a so-called "matching circuit and delay circuit 7 and 34" which drives and interfaces with the endoscope insertable part 1. In

describing the embodiment of Figure 10, column 8, lines 43-46, state: “when the connector section is connected to control device 2, the matching circuit and delay circuit 34 are connected to CCD drive circuit 14 and sample-and-hold circuit 16”.

The foregoing immediately conveys that the video processor portion 2 in Figure 10 is connected through a connector to the matching circuit 34. The matching circuit and delay circuit are not part of the video processing circuit. This directly contradicts the teaching of the present invention and the recitation of claim 1.

In fact, beginning at line 51 of column 8 of the Yabe et al reference, it is specifically stated: “The matching circuit and delay circuit 34 have a fixed time constant and delay time determined for each group. Accordingly, these circuits can be incorporated in an exclusive-use IC or RC embedded, multilayer substrate for each group, so that the circuit 34 can be miniaturized. Thus, connector section 7 or endoscope 1, which contains circuit 34 cannot be too bulky.” (emphasis added).

Thus, this reference explicitly and unequivocally teaches that the delay circuit-34 is part of the instrument 1, which is the insertable endoscope portion. This openly and unequivocally contradicts claim 1 of the instant invention and the very teaching and advantages which it seeks to provide.

The Office Action explicitly recognizes differences between the structure of the applicant’s claimed invention and the Yabe reference, insofar as the location of the delay circuit is concerned. Despite the foregoing, the Office Action states:

“Nevertheless, the end result (process) of the delay circuit relative to the endoscopic function is substantially the same in both the Applicants’ claimed invention and the Yabe et al’s reference.”

Applicant takes strong exception to the idea and logic that asserts that merely because a certain functionality is obtained in Yabe et al which is substantially the same as in the applicant’s claimed invention, the structural differences between the two arrangements must be ignored. To the contrary, despite the fact that the ultimate functionality is the same, the structural arrangement is different and, most importantly, the advantages and benefits derived from the structural differences are very significant and of patentable weight. In the accordance with the teachings of the present invention, one is able to provide a single video processor to suit and to be connectable to a great variety and many different groups of endoscope inserting parts, including parts that have different imaging circuits and internal cable lengths. This is impossible with the design and arrangement of

the Yabe, et al reference, which explicitly teaches creating separate and non-programmable delay lines and matching circuits for different endoscope insertion parts. Claim 1 is, accordingly, clearly defined over the prior art of record and merits to be allowed.

The remaining claims in the application are all dependent from claim 1 and include its limitations and have further limitations, the significance of which has been emphasized in previous communications to the Patent Office. As such, the non-obviousness and patentability of the dependent claims is even more forcefully apparent.

For completeness, it is further noted in the claimed invention of the present application, the delay circuit for correcting the length of the signal line attributable to the length of the endoscope insertion part is provided not at the side of the endoscope, but in the video processor. In contrast to this, in Figure 10 of the Yabe reference, the delay circuit is provided at the side of the endoscope. That is to say, in the present invention, the function for correcting the length of the signal line attributable to the length of the endoscope insertion part is completed in the video processor. So, in accordance with the present invention, it is not required to constitute any endoscope for exclusive use which has a delay circuit on its own, but possible to widely apply the invention to any commonly used endoscope.

In contrast to this, in Yabe, the function for correcting the length of the signal line attributable to the length of the endoscope insertion part is provided to extend over the video processor side, as well as the endoscope side. Hence, in Yabe, the video processor is unique and the endoscope also has a unique use. In other words, it is only possible to connect the endoscope of the Yabe reference to the video processor of the Yabe reference, and vice versa.

Therefore, the Examiner is respectfully requested to reconsider the application, allow the claims as amended and pass this case to issue.

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on July 29, 2004

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